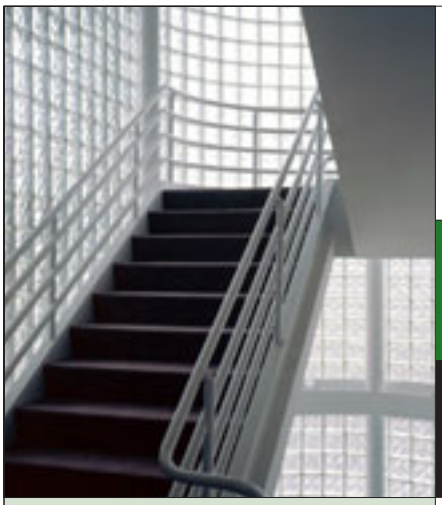

Get to know the i-codes

This is the third in a series of publications exploring the differences between the Uniform and International Codes (I-Codes). Topics covered in the series include means of egress, building uses, heights and areas, types of construction, fire-resistance-rated assemblies, accessibility, structural provisions, and the residential and mechanical codes. Additional topics may be added in 2004.

Chapters 5, 6 & 7

New I-Codes in 2004

The 2003 editions of the International Building, Residential, Mechanical and Fire Codes (I-Codes) will replace the Uniform Codes this summer.* DPD expects the I-Codes to take effect in Seattle in late summer 2004.

You may use the I-Codes before Seattle formally adopts them, but should call (206) 684-8850 for a pre-submittal conference before proceeding with design. You can choose to use either the I-Codes or the Uniform Codes during the 60-day period after the effective date.

The Seattle amendments to the I-Codes will be available by the effective date from DPD's Public Resource Center, 20th floor, Seattle Municipal Tower, (206) 684-8467.

Questions? Call DPD technical support line at (206) 684-4630, 1-4:15 p.m., M-F.

Purchasing Codes

- WA Assn. of Building Officials (360) 586-6725, *www.wabo.org*
- International Code Council (800) 284-4406, *www.iccsafe.org*

Code Trainings

- WA Assn. of Building Officials (360) 586-6725, *www.wabo.org*
- International Code Council (800) 284-4406, *www.iccsafe.org*
- American Inst. of Architects -Seattle (206) 448-4938 *www.aiaseattle.org*
- Structural Engineers Assn. of WA (206) 682-6026, *www.seaw.org*
- Building Industry Assn. of WA (360) 352-7800, *www.biaw.com*
- Master Builders Assn. of King and Snohomish Counties (425) 451-7920 *www.mba-ks.com*

Heights and Areas in the International Codes

One of the more interesting and controversial subjects in the International Building Code (IBC) is allowable heights and areas.

IBC Table 503, similar to Uniform Building Code (UBC) Table 5-B, shows the basic heights, areas and number of stories allowed for each occupancy and construction type. Other sections in Chapter 5 allow increases in height and area for sprinkler protection, frontage, and for special occupancies. Chapter 5 is also where the provisions currently found in Section 601.2.2, for buildings with a wood-frame structure above a concrete base, will reside.

These same provisions that have caused controversy are seen by others as some of the biggest advantages of the IBC. Many of the values in IBC Table 503 are greater than in UBC Table 5-B. In addition, IBC Section 504.2 allows an increase in height, number of stories and area in buildings that have an automatic sprinkler system.

IBC Section 504.2 allows for an increase in height, number of stories and area in buildings with automatic sprinklers.

Another feature of the IBC is the difference in the calculation of increases allowed for frontage. The IBC allows an increase in area for buildings that have at least 25 percent of their perimeter adjoining or with access to a public way. Unlike the UBC, the IBC allows the increases to be proportional in relation to the amount of perimeter with frontage. However, the maximum additional area for this increase is capped at 75 percent, whereas the UBC allowed up to 100 percent.

Added to all of this, the method for calculating the allowable area for a building has changed. The ultimate result of all the changes is generally that larger floor areas will be allowed under the IBC than under the UBC.

The IBC makes an important change in terminology related to stories and basements. Basements are considered "stories" in the IBC. However, Table 503 only limits the number of "stories above grade plane." The definition of basement describes when a basement is a story above grade plane. Seattle is proposing to keep the "25-foot rule," currently found in the definition of "story," that allows up to 25 feet of perimeter plus 22 feet of driveways to be excluded when determining whether a basement is a story. So the change in terminology should not have much effect here.

** NOTE: The Uniform Plumbing Code, National Electrical Code, and WA State Energy Code with Seattle amendments will continue to be enforced in Seattle and WA.* *Updated 5/19/04*

Types of Construction and Fire-Resistive Assemblies in the International Building Code

As in the Uniform Building Code (UBC), the provisions for types of construction are found in Chapter 6 of the International Building Code (IBC). The IBC types of construction correlate very closely to the UBC's, as illustrated in **Table 1** below.

Table 1

Type of Construction	
UBC	**IBC**
I-FR	I-A
II-FR	I-B
II-1 hr	II-A
II-N	II-B
III-1 hr	III-A
III-N	III-B
IV-HT	IV
V-1 hr	VA
V-N	VB

Construction that is called "FR" in the UBC is grouped into Type I of the IBC; the UBC "one-hour" types of construction are the "A" types in the IBC; and the UBC "Type N" construction is type "B" in the IBC.

IBC Chapter 7 contains the provisions regarding how different types of fire-resistance-rated assemblies are constructed. Most of the scoping provisions (provisions that tell when fire-resistance rating is required) are found in other parts of the code.

Some definitions are helpful in understanding Chapter 7. It is important to distinguish between "fire resistance" and "fire protection" ratings. "Fire resistance rating" is the time an assembly, such as a wall, maintains its ability to contain fire. "Fire protection rating" is similar, but applies to opening protectives, such as fire doors and windows.

Another important term is "fire separation distance." Fire separation distance is the distance from a building to the lot line, public way, or to the imaginary line between two buildings on the same lot. The primary use for fire separation distance is to determine the fire-resistance rating required for exterior walls.

IBC Section 704, Exterior Walls, is a critical section in the IBC. Table 602 contains the provisions telling when exterior walls are required to be rated, and also tells what rating is required. Section 704, however, contains almost all the other provisions for fire-resistance rating of exterior walls.

The way openings in exterior walls are treated has changed significantly in the IBC. The IBC allows a combination of protected and unprotected openings in exterior walls. For instance, walls that are 10-15 feet from the property line may have up to 15 percent of their area in unprotected openings, plus as much as 45 percent protected openings. In buildings that are equipped with a sprinkler system, the area of unprotected openings may be increased to the area allowed for protected openings. For example, the wall 10-15 feet from the property line, when it is in a sprinklered building, may have unprotected openings in 45 percent of its area, plus protected openings in 45 percent of its area.

The names of some familiar types of fire-resistance-rated assemblies are different in the IBC. For instance, "area separation walls" are called "fire walls" in the IBC and "occupancy separations" are called "fire barriers." **Table 2** below shows more detail.

All the provisions for how these assemblies should be constructed are found in Chapter 7, and the provisions for where the assemblies are required are found in other parts of the code.

Table 2

IBC Assemblies	Major Uses of the Assembly
Fire wall	area separation
Fire barrier	occupancy separation; also used for shaft enclosures, exit enclosures, exit passageways, enclosure of atriums
Fire partition	dwelling unit separation, separation between guest rooms, corridor walls, tenant separation in covered mall buildings
Smoke barrier	compartmentation in Group I occupancies, areas of refuge
Smoke partition	alternative to fire barrier as enclosure for atriums, corridors in Group I occupancies

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